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The role of Sustainability Indicators within evidence-based policy for sustainable development in the European Union.

Simon Bell and Stephen Morse

Abstract

Sustainability Indicators (SIs) have been popular among a section of the policy and science community for some years and are often promoted by this group as a potent vehicle to help make sustainable development a reality. One of the claimed strengths of SIs is their ability to present complex data and trends to policy makers. It is assumed that SIs can thereby help to make policy and indeed management more transparently evidence-based, yet this assumption has rarely been tested. This was the rationale behind the European Union funded Framework 7 project 'Policy Influence of Indicators' (POINT; contract no 217207) which began in 2008. A major element of the project involved a number of participatory stakeholder workshops designed to elicit viewpoints regarding the use of SIs in sustainable development policy at EU and member-state levels. This paper presents the results of those workshops, and discusses the ramifications for the use of SIs in evidence-based policy in the EU. We summarise some of the key findings as the '5 Ds':

Disconnect with current use of SIs. Issues here are a lack of understanding as to what is required in sustainable development and who is responsible for implementation.

Dominance of economic indicators making it difficult for SIs to be heard

Dissemination; covers the need for education in the importance of sustainable development and the means by which information is disseminated

Disambiguation; covers data availability issues and opaqueness of existing SIs making them difficult to appreciate

Dictum. A grammar or rules is needed clearly indicating what we mean by sustainable development and thus the SIs that are needed for implementation.

Our research is also indicting that we are gaining clarity over what features are most consistent between indicator user groups and indicator use. This is leading us towards an heuristic device for measuring and even predicting the use of indicators by specific policy groups.

Key words: Sustainability Indicators, evidence-based policy, European Union, stakeholder participation

1. Introduction

The notion of basing intervention upon a body of evidence which predicts what changes will arise from that intervention has been around for some years. The logic is clear. Given that any intervention will require a 'spend' of resource and could have a substantial impact (positive and negative) upon groups within a community it seems reasonable to know what should be done in order to have the best chance of achieving desired goals. This requires knowledge from research and prior experience and also the requirement to test out a planned intervention on a trial basis before scaling up. After all, the alternative is to imply that interventions should not be evidence-based, and this is clearly against the current tide of thinking in public administration. The logic suggests that evidence-based policy should help with problems such as the following (Sorrell, 2007):

- Conflict and confusion over key issues amongst policy makers
- Over-reliance on individual studies which may not have a wider applicability
- Inadequate accumulation and synthesis of research results
- Wide-ranging but inconclusive literature reviews that pay insufficient attention to methodological quality. Thus it can be difficult for policy makers to separate out the wheat from the chaff.

Evidence-based policy is often described as a modernist-rationalist project in the sense that it assumes an unambiguous cause-effect, and in the UK it was embraced by the New Labour government of the 1990s (Sanderson, 2002):

"New Labour proclaims the need for evidence-based policy, which we must take to mean that policy initiatives are to be supported by research evidence and that policies introduced on a trial basis are to be evaluated in as rigorous a way as possible."

Plewis (2000; cited in Sanderson, 2002, page 4)

However, whilst 'evidence-based' policy has an undoubted logic in the sense that decisions should be founded upon some notion as to what change is desired and the best means to bring it about, it is often not the reality and this has been the cause of much frustration in the academic literature. Huston (2008, page 1) speaking of the difficulty of making 'evidence-based' approaches a reality makes the following observation:

"Most social scientists believe that strong evidence should lead policymakers to adopt effective programs and to eschew those that are demonstrably ineffective, but policies sometimes seem to fly in the face of data. The unpredictable and volatile world of social policy has led some researchers to renounce efforts to inform it because they believe that decisions are entirely political and that data are invoked at best only to support a position that someone has already decided to endorse."

But given that evidence implies an intrinsic authority (Neylan, 2008) why should policy not be evidence-based? It has to be recognised that policy makers are under many influences and frankly 'evidence' is just one of them. Huston (2008) for example lists the four 'I's' as factors influencing policy makers:

- Ideology
- Interests
- Information
- Institutional contexts.

The reader should note that only one of these 'I's, namely Information, can be equated with evidence while the others are far more subjective. Policy may simply be driven by political ideology and the interests of specific interest groups in society rather than any sort of modernist-rationalist logic. Indeed it is not inconceivable that the starting point may be ideology and evidence may be selectively sourced to back an ideological standpoint (numerous political/ ideological anecdotes support this, from Lenin to Franco). Similarly, policy may be influenced by an institutional context such as availability of resources (staff, facilities, money etc.) to implement and monitor changes. An intervention may be desirable and have a good chance of success based upon the available evidence but may simply be too expensive or be far too complex for an implementing agency to handle.

Therefore perhaps unsurprisingly the 'rationality-modernity' which underlies 'evidence-based' approaches, has been critiqued from a number of angles most notably from the constructivist/interpretivist position which rejects the notion that social systems can be so readily deconstructed as scientists manage to achieve when exploring the laws of the universe. For them the meaning of 'evidence' from social systems can be contested as it can reflect preconditioned standpoints. In essence, they argue, what you want to see is what you get or, more worryingly, people only tend to respect what they already know and agree with. However, if anything such post-modernist stances which seek to highlight the complexities of the social world help point towards the need to know (in some way and given subjective caveats) what impacts any sort of intervention would have. A position of blind 'try it and see' could potentially be highly damaging so maybe it is best not to do anything at all! But, at the risk of stating the obvious, this is an indefensible position given problems in society such as crime and social exclusion and there is a need for some guidance to human action otherwise it is a recipe for complete abstention from any attempt at intervention (Sanderson, 2002). Nevertheless it is not possible or even desirable to ignore the complexity of social systems and their systemic interpretation as major problems in deriving evidence that can form the basis for interventions (Tavakoli et al, 2000; Pawson, 2006; Bruckmeier and Tovey, 2008).

Indicators and indices (I&I) have been regarded as useful tools within the broad process of basing policy on evidence (Bell and Morse, 2003, 2008; Hezri and Dovers, 2006). Given that policy makers may not have the time, access or indeed the skillset to dissect many sources of evidence such as academic journal papers and other technical publications there is a possible disconnect between those generating 'evidence' and those who are charged with making evidence-based policy. It is often argued that what is needed are ways in which that communication gap can be bridged. Some call for 'knowledge brokers' who specialise in translating and communicating technical evidence to policy makers (Choi et al., 2005). Others call for better ways in which technical information can be presented to policy makers and I&I are one means of achieving this given that by definition these tools are designed purposefully to simplify complex data. They can be presented in simply tabular or diagrammatic formats to make them as easy as possible to digest (Chess et al., 2005). The thesis would appear to be: *I&I permit complexity to be simplified so decisions can be made.*

However, while the theory is strongly supported in contemporary politics with regard to the value of I&I in helping to frame evidence-based intervention there is a surprising paucity of published empirical evidence which provides supporting evidence for such an influence. In other words, can we rise above anecdotal support of the thesis? Do I&I actually succeed in bringing about an influence on policy? One attempt to answer this simple question is provided by Hezri and his colleagues who explored the linkages between I&I and policy in Malaysia (Hezri, 2005; Hezri and Hasan, 2004). Indeed one of the main findings that arose from their work is the difficulty of proving a cause-effect 'instrumental' relationship between indicators and policy. In effect while the question may be simple the answers are not. Indeed Hezri and his colleagues argue that I&I pass through a number of stages of utilisation on their way to exerting an influence:

1. Onset: I&I cross the cognitive screen of user (the user becomes aware of the I&I)
2. Influence: I&I changes the worldview of users and induces action
3. Acceptance: I&I influences policy
4. Institutionalisation: I&I influences policy over time

Even in this linear model there are terms such as 'influence' and 'action' as well as 'users' that may appear to be relatively simple yet in practice are open to many multiple interpretations (Innvaer et al., 2002). For example, under stage 2 the I&I change the 'worldview' of a user and thereby induces some action, although such change can be very subtle and a user when questioned may not necessarily be aware of an influence arising from a specific I&I. Another consideration surrounds what constitutes 'success' in this model. The stages of utilisation imply that a truly successful I&I is one that can be shown to have passed through all four stages; from onset through to institutionalisation. However, getting to stage 3 (an influence without institutionalisation) can also be regarded as success, even if it is more limited. Beyond that it gets more subtle. If an I&I changes worldviews can that be regarded as success?

On the surface this paucity of empirical evidence may seem surprising given the importance of the topic and the fact that I&I have been around for some time. Nonetheless it is perhaps understandable given that as mentioned above decisions to intervene can be founded upon a host of concerns, including, as Huston argued: political ideology, special interests and institutional allegiances. Separating out one influence, such as I&I, from another may be fraught with difficulty. Working backwards and taking a single policy it is likely that many forces may have been involved at certain times and each may have been subject to a suite of interacting influences, some reinforcing while others may be at odds. Even so, while complexity is to be expected it does seem reasonable to explore the role of I&I in influencing policy, and following on from this to develop ways in which their influence may be enhanced.

It is this question which formed the basis for the EU Framework 7 project entitled 'Policy Influence of Indicators' (POINT), and this paper will present some of the findings from one of the work packages of the project designed to elicit the views of a range of stakeholders as to the extent and driving forces which surround the influence of I&I.

2. Exploring the influence of I&I

There are various methodological approaches that could be employed in exploring the influence of I&I on policy. A questionnaire-based survey could be used involving those working in policy and the results analysed either quantitatively (with a high-structured questionnaire) or qualitatively (using text analysis software for example). For example, a number of individuals could be questioned about their awareness of certain I&I, how they come across them and the roles that they play in both policy design and monitoring of progress. The process can be relatively quick but much depends upon how the sample is constructed and the questions being asked. It is possible that those charged with creating I&I and making them available to policy makers may have quite different answers to these questions than do those meant to 'use' the I&I. It may be necessary to talk with individuals who are representative of all the groups involved in the process. There is also the danger of missing much important information as there may be factors at play which those creating the questionnaire may not have been aware of. After all, respondents will only answer questions which they are asked. Indeed even if the right questions are asked it is possible that a respondent may have forgotten the circumstances or perhaps consciously or unconsciously enhance or diminish the chain of events. Hence it is also important to check written records of events such as the minutes of meetings and reports.

A second approach would be more observation-based where policy makers are shadowed over a period of time to see what influences they are exposed to and how they impact upon the process of policy formulation. This approach has the advantage of being able to capture complexity and nuances involved in the process in a way which questionnaires may not be able to achieve. Factors which the researcher may not have been aware of at the start of the process will emerge, and the researcher can derive almost a first-hand experience of the forces at play thereby avoiding any bias that might arise during interviews. However, observation is a very time consuming process given that important factors may emerge over weeks and months. There is also the real danger that the presence of the researcher can alter behaviour.

A third approach could be based upon participatory action research (PAR) group workshops whereby a team of policy makers and those engaged in influencing policy could be brought together to share insights and arrive at a shared understanding. The advantages of such workshops is that they allow for debate and cross-participant learning rather than being a more extractive (mining) process as are questionnaires or indeed observation. Thus the analyses which come out of such workshops can be rich with insight and include emergent factors which the researcher may not have considered. On the negative side PAR workshops can be expensive and factors such as group dynamics can be important influences on outcomes (Morse, 2008). For example, domination by an individual or group of individuals can 'steer' a group in a particular way. In addition, by the very nature of such workshops the tendency is for a group to produce a single analysis and hence variation in perspective which may exist becomes hidden.

However, participatory methods offer unique research insights and are in increasing use in a wide range of fields. Toolkits of such approaches have been developed (Chambers 2002; Creighton 2005) and their use is both global and domain rich (for examples from Forestry to e-participation, from China to Finland see: de Zuniga, Veenstra et al. 2010; Kangasa, Saarinen et al. 2010; Peterson 2010; Spirakis, Spiraki et al. 2010; Zhao 2010). Considerable research and practice has been recorded in addressing key issues for participation including: ways in which the term 'public' is constructed, participant motivation, identification of interests and interest groups and empowerment of the outcomes from participation (Clayton Thomas 1995; Barnes, Newman et al. 2007). (Kendon, et al. (2007) have set out much of the terrain which participatory methods have to manage and neatly sums up the approach as:

"Participatory Action Research (PAR) involves researchers and participants working together to examine a problematic situation or action to change it for the better" (Kendon, et al. page 1).

As both Kendon et al. (2007) and others (Rajakutty 1991; Chambers 1992; Chambers 1997; Chambers 2002) have shown, the range of approaches to PAR are legion. However the key outcome is general to all; working together to make things better.

The three approaches outlined above can all be applied within a particular research project. Whether one selects questionnaire, observation or PAR much depends upon who has been selected to engage in the process. There is no such thing as an homogenous community of policy makers, and even in the same institution there is likely to be much diversity in terms of the influences at play on policy and the ways in which individuals react to I&I. Individual interviews and observations can pick this up, of course, although even here there can be distortion depending upon who is selected for interview/observation. Group methods can hide such diversity but at the same time can provide a means by which all those involved can learn from each other rather than a one way process where the researcher learns from the researched.

3. Method

The POINT project adopted two main approaches to data collection; questionnaires and group workshops. In this paper only the results of the latter will be described. The findings of the questionnaire-based studies will be reported elsewhere.

The methodology employed in the group-based research described here is called Triple Task (TT). TT has three elements, the bedrock of which (Task 1) draws from the 'soft systems' methodology of Peter Checkland, the psychoanalytic methods of Bridger and Klein and previous work by the authors on the Imagine Methodology. (Checkland 1981; Checkland and Scholes 1990; Klein 2001; Bell and Coudert 2005; Klein 2005; Bridger 2007). In Task 1 teams of some 4 to 5 people are asked to explore the issue, in this case the influences of I&I on policy, in a participatory fashion and arrive at a shared understanding of the key factors at play. The outline of Task 1 is shown as Table 1. At various stages in the process the participants present their findings and it is these which provide the insights with regard to I&I influence in policy. The other two tasks of TT are designed to derive an understanding of the group dynamics at play and how they influence the outputs of each group. However, in this paper only the findings from Task 1 will be described.

The results presented here came out of a number of TT workshops summarised as Table 2. Three of the workshops were focused on I&I in sustainable development policy in general terms while two others were focussed on the sectors of agriculture and transport. One complicating factor is that the workshops took place within different national as well as sectoral contexts. Even so, the researchers expected to see some common elements in the influence of I&I at play across these contexts. Notes were taken by the facilitators of each workshop based upon the written outputs and the explanations and discussions that took place amongst and between groups. These notes provided the basis for analysis.

4. Results and discussion

The TT workshops generated many interesting insights and for the sake of convenience some of these can be classified into themes called the '5 D's' (Table 3). It should be stressed that the 5 D's by no means encompass all the findings of the workshops but do provide points for discussion. Employing the 5 D's as a simple analytical framework then some highlights from the research so far are presented as Table 4. Each workshop is presented as a column and the rows represent some broad themes which summarise the notes taken during the workshops.

It first has to be noted that some points raised in the workshops are familiar ones within the evidence based policy literature. For example there is further affirmation that I&I should have an influence in policy and the ways in which they are communicated is important. Neither of these is especially surprising given that I&I are designed on purpose – not accident – to have such an influence and much thought is usually given to the ways in which the I&I are communicated. However, besides these confirmations there are also many novel insights. It should be noted that there is no such thing as 'right or wrong' with regard to these views. They represent 'truth' in a relative sense and in so far as the group could agree that the point was an important one to express in their outputs and explanations, and there may be disagreement and even contradiction across themes. One group may come to a conclusion that will flatly contradict what another has said – frames of reference and Worlds of Discourse may contradict.

The matrix in Table 4 has many cells that can be connected together into 'filaments of thought'. In effect these filaments add other dimensions to the 2 dimensions of Table 4. The following discussion highlights a number of the more interesting (at least for the authors) emergent and apparently coincidental filaments of thought that emerged. The filaments are summarised in Table 5a, b and c, where in each case the relevant cells which comprise the filaments from Table 4 are shaded

The first filament that emerges out of Table 4 is the notion that I&I are not static measures that are created and remain constant but change with time (Table 5a). Within the **Disconnect** theme there was a call for I&I to be taken away from an institutional focus. The idea here is that I&I can become associated (owned) by an institution and thus can acquire baggage which can work both in favour and against their influence. In effect I&I enter a natural selection process where the selection factors are not only the technical appeal of the I&I but also a consideration as to where they have come from – who has developed the I&I and who is championing it? Some I&I do better (are more successful) within this natural selection than do others. A related point emerged from the Slovakia workshop focussed on agricultural I&I under the theme of ‘**Dominance**’. One group used the phrase ‘indicator life cycle’ which included a notion of competition between I&I but also that the competition would drive changes in the I&I in terms of its makeup and also how it is presented. In this dynamic ‘success’ may be related to whether I&I are seen and commented upon rather than necessarily having a direct and instrumental influence which can be measured. There is an important difference between these. For example, I&I might be reported upon in the mass media and perhaps even official reports and thus be ‘successful’ in the eyes of those creating and promoting the I&I but not necessarily have a direct and measurable influence on policy. That is not to say that they have no effect at all, of course, as even having an awareness of the I&I can bring about more subtle and unconscious changes (this raises a deeper issue relating to the ability to measure the effect of the measured indicators upon decision making – and then to compare this measurement against, for example, the effects of Huston’s other three ‘I’s). Hence the I&I life cycle as expressed in the workshop is different to the stages of I&I utilization proposed by Hezri (2005) in the sense that success is not simply a matter of use or influence, seen as a linear progression through the stages of utilisation. Instead success may simply be seen by some in terms of an I&I appearing and being quoted in a rich source of outlets. Thus if this wider view of I&I success, and hence section pressure, is adopted then the linearity of the stages of utilisation becomes a far more complex web and some I&I may continue to thrive even if they are not shown to influence policy.

A second filament of emergent thought across the themes of Table 4 can be thought of almost in terms of a post-modernist discourse and the need to move away from a universe of I&I to a multiverse (Table 5b). Under ‘**Dissemination**’ there was mention of the need to take I&I out of a more formal mode of presentation and even into an ‘open source’ world where ownership becomes very diffuse. This implies the need for constant change and interaction between all those involved (creators and users), and in part is meant to break out of the dominant worldview which emphasises a narrow perspective and focus on economic I&I (universe) into a multiverse which embraces social and environmental dimensions as well. The answer which emerges from the groups is to help make people care about I&I and one of the reasons why they may not care is because they are being forced into adopting and working with an imposed and narrow perspective. Open-sourcing I&I could be a way of breaking I&I into a wider world, but a question remains as to whether in itself it would be enough? Economic I&I dominate the measurement world view for a reason – because these are the factors that time and time again dominate (by a variety of cultural and linked media interests) in elections and lower key citizen events and thus influence politicians. Breaking out of that tramline of the uni-I&I worldview would be a challenge.

Thirdly, there is a filament which questions the rationality which I&I are meant to be a part of (Table 5c). As one group in Denmark pointed out, there is often an assumption that evidence-based policy is rational but in reality it is not. Related points appear under ‘**Dictum**’ with comments about the assumptions made behind I&I and the lack of understanding (rules) behind the influence of I&I. The groups felt that there needs to be more input from those meant to be influenced by I&I rather than a monopoly driven by those involved in the creation of I&I. This links back to the ownership issue mentioned above. Unfortunately the literature on I&I has largely been written by the ‘insiders’,

those interested (even fascinated) in I&I in a more technical sense, including those who assume that if an I&I is technically adept then it must be used and therefore seek to determine how best they can be presented. But as described earlier and reiterated by the groups there are many influences on policy and I&I are but one (as Huston 2008 observed). I&I cannot be taken out of this wider context of influence, but unfortunately much of the literature to date tries to do just that. As a result the groups argued that policy makers need to become far more engaged in the I&I discourse if these tools are to succeed. Indeed, why have they not been so engaged to date? Why does the communication breakdown referred to by a Finnish group exist? Could it be that policy makers are making use of I&I but in ways which are far more subtle than the literature often suggests? Is there a need to explore the *occult* use of I&I as well as the presenting face? As mentioned above, I&I could be helping to shape a worldview amongst policy makers and thus could be influencing policy in ways which don't suggest a formal and measurable cause-effect. As Hezri (2005) suggested proving such a simple instrumental influence of I&I in policy is difficult, but that is not to say that I&I are not successful via more subtle and ethereal routes. In effect, changing worldviews would be success without having to progress to stages 3 or 4 of Hezri's model.

5. Conclusion and Next steps

So far, our research shows that the three filaments are related. As shown in Figure 1 the notion that I&I do evolve organically via a process of natural selection, where the pressures are not just some notion of technical excellence or instrumental use, would imply that the more successful forms of I&I in terms of demand will have greater influence even if the latter is not directly measurable in any empirical sense. The consumers of I&I as well as the creators help to drive this process and thus the pace and extent of I&I evolution is enhanced. Consumers are not just policy makers but anyone who makes use of I&I for whatever reason. However, even here I&I are but one influence and it would be a simplification to assume that even in the most extreme success stories that I&I are the only influences which drive policy. On the other hand the evolution of I&I could arguably be in the direction of reinforcing a universe (for example the uni-verse of economic orthodoxy) rather than multiverse; the presenting 'spirit of the age' and thus demand is for *economic* I&I so that is what drives the evolution. The POINT workshops indicate that more hidden and occluded, occult zeitgeist are in evidence, but are under-represented for the main part. The boxes on the right and at the foot of the figure – influence linked to multiverse – does not happen and herein rests the conundrum. The I&I in demand by policy makers do arguably have a strong influence and the policy makers engage and drive the evolution in directions that they wish to see. The multiversal I&I are not in such demand so by definition the consumers do not engage so much and evolution does not work so strongly. The result is a self-fulfilling stagnancy in cyclic terms – no demand for multiversal I&I gives little pressure for change which in turn does not enhance demand and influence of such I&I. A different 'spin' on this, which explains the outcome just as well is that there is a dominant 'neo-classical economic' world of discourse at work. This tells the story of our age and suffers no other World of Discourse (WoD) to compete. The multiverse of I&I must be seen as being hostile to the universe of economic determinism. By conspiracy or complacency the multiverse of I&I fails to succeed.

So how does this connection become established? Within the dissemination theme of Table 4 there is mention of the need for better education and communication on the part of those promoting the I&I multiverse. There is also the interesting comment that democracy is perhaps 'too big'. What they meant by this was that democracy forces an I&I universe which reflects the day-to-day concerns of the voters – keeping their jobs, increasing their pay, lowering the cost of living and taxes etc. In this argument democracy is bad for the I&I multiverse – it works against the involvement of policy makers and other consumers such as the media in I&I which voters do not rank high on their concerns at election time (not necessarily the same as what they would say between elections) which in turn restricts the natural selection that would make these I&I 'better' and more responsive

to need. Hence the calls by some groups for better education of the electorate to encourage them to consider the multiverse, but that is far easier said than achieved in the capitalist system which dominates in the world today. However, our conspiracy model would see this as a wasted endeavour – educating the citizenry is pointless if the decision makers are already disinclined to see any reality other than that which is drawn by a neo-classical economic uni-verse.

On a more positive note, to draw inference and make some really positive suggestions to policy makers could be a successful strategy. Arising from this work, suggestions to policy makers could be framed as follows in five premises:

- P1. For it to work at a practical and theoretic level, the EU needs to make information provocative, relevant and innovative. This is because people are more likely to want information which is in their 'world' and which conforms to items in their World of Discourse (WoD). If information takes people on a journey of discovery and makes it possible for them to feel that they are really doing break through thinking in their WoD the investment in the exercise will be rewarded.
- P2. Display clear rules and make it clear that they can be knocked down by P1 so long as the rule is no longer relevant to the WoD in question.
- P3. Always leave gaps for people to fill in themselves, thereby leaving their creation in their WoD in place
- P4. Bring information together in interesting and provoking but unexpected new combination WoDs thereby allowing WoD planes to collide and be ready to pick up the exciting new WoD outcomes.
- P5. Encourage exploration and innovation in all WoD experience relevant to information/indicator use. In other words, seek to enhance the process of natural selection by encouraging a wide range of I&I consumers.

WoD in collision? Comparing like with unlike I&I? Such activity could arise in creative and empowered use of I&I and a move towards evidence-based decision making. There is good reason for optimism and a degree of concern over the emergent outcomes arising from the collision of different I&I derived from different WoD. As Koestler argued:

“When two independent matrices of perception or reasoning interact with each other the result .. is either a collision ending in laughter, or their fusion in a new intellectual synthesis, or their confrontation in an aesthetic experience. The bisociative patterns found in any domain of creative activity are tri-valent: that is to say, the same pair of matrices can produce **comic, tragic or intellectually challenging effects**.” (Koestler 1964 page 45, our emphasis.).

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Figure 1. The relationship between the 3 strands of thought that emerge out of Table 5.

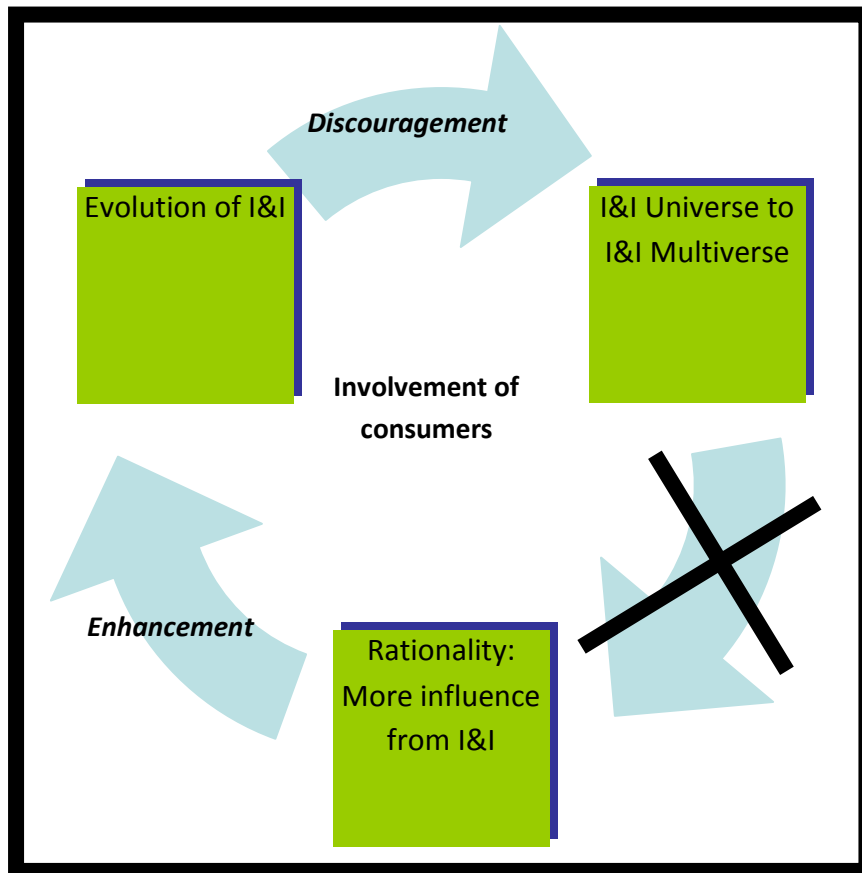
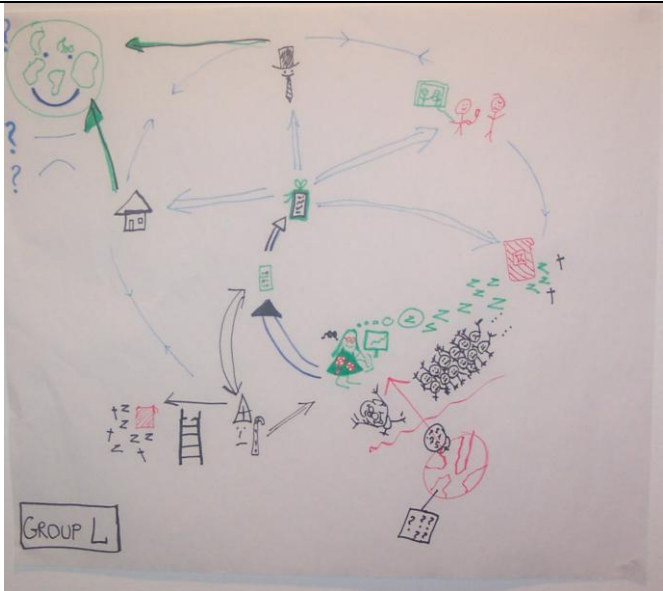
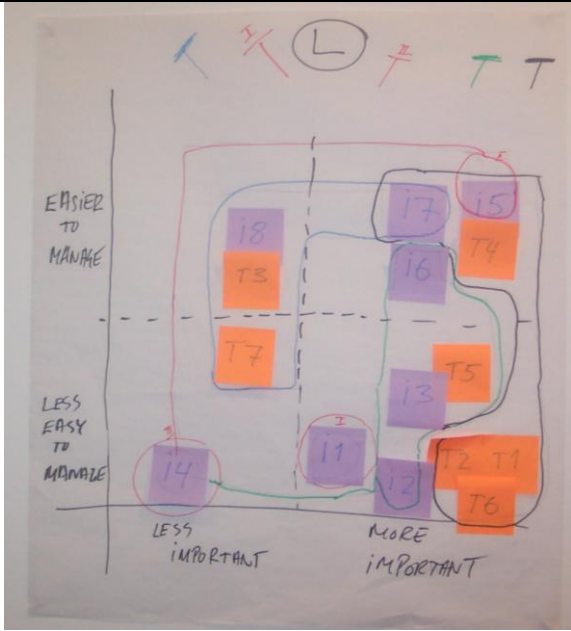
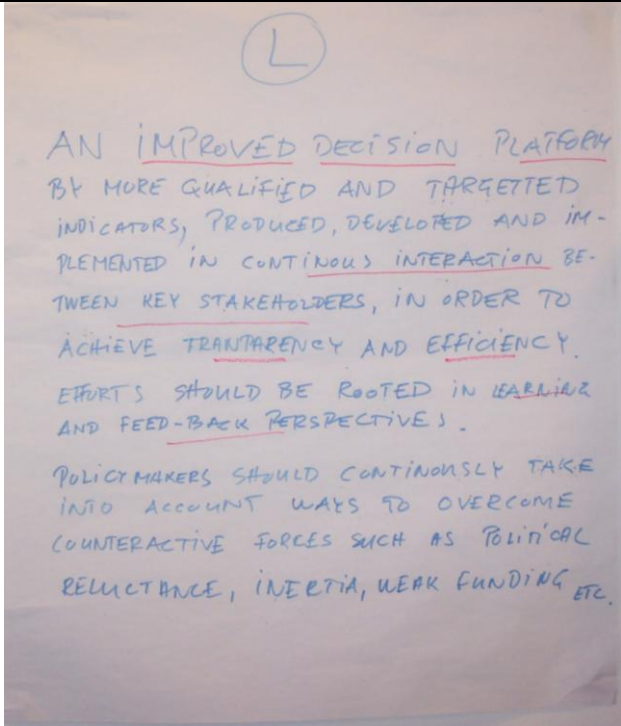


Table 1. Outline of Task 1 within Triple Task and the outputs which are generated throughout the process

| <i>Element</i> | <i>Process/ content</i> | <i>Outcome</i> | <i>Outputs</i> | <i>Examples (group L, Denmark)</i> |
|----------------------|-----------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Rich Picture mapping | All participants involved in drawing a RP of their combined experience of the use of indicators to-date | Group cohesion plus shared understanding of the experience of indicators (including 'use') | Rich picture (before change) Member of each group presented the picture and discusses the main points. |  |
| Tasks and Issues | Participants draw out major issues or problems with their combined use of indicators. Also things that might be done to improve the situation | Focus and concentration on main shared issues and tasks | Set of tasks and issues, typically listed on 'post it' notes' on a separate sheet of paper to the rich picture | |

| | | | | |
|------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Systems of Challenges (SoCs) | Participants put together tasks and issues in four or five combined SoCs and provide them with catchy titles to indicate their main meaning | More focus and assessment of the big themes/ challenges to the use of indicators | Post-it notes grouped into SoC Member of each group presents SoCs and explains why they are grouped the way that they are. |  |
| Importance/ ease of addressing Matrix Review of SoCs – grading in terms of importance | Reminder of the value of the SoCs .. grading in terms of importance | Even more focus. Really getting to grips with the relative importance of the various tasks and issues. | Classification of post-it notes across a spectrum of importance and ease by which they can be addressed | |
| BITAOC – turning the challenge into a transformation | <i>For as many SoCs as time allows, develop them into BITAOC criteria</i> | Beginning of clarity about how things might be improved upon | BITOAC statements | |

| | | | | |
|-----------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Root definition of the BITAOC into a Vision of Change (VoC) statement | <i>For as many BITAOC criteria as time allows</i> – develop into a statement or VoC | Visionary statements about how things could be improved upon | BITOAC transformed into a root definition Member of each team presents the root definition and described how it emerges from the SoCs |  |
| Action plan the transformation – who does what when? | <i>For as many VoCs as time allows for:</i> develop an outline of Who needs to do What and When in order to achieve the Voc | An action plan of the changes which could be achieved in order to make the use of indicators more effective in decision making | | |


| | | | | |
|--------------------------------------|--------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| <p>Scenario map possible futures</p> | <p><i>For as many scenarios as time allows for:</i></p> <p>Rich picture(s) by the group of how a better future might look.</p> | <p>At least one, but maybe a sequence of realistic views of how an improved future might look.</p> | <p>Rich picture (after change has been implemented)</p> <p>Member of each group presented the picture and discusses the main points</p> |  |
|--------------------------------------|--------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|

Table 2. Composition of the POINT workshop groups

| Workshop topic | Location | Dates | Number of participants (groups) | Groups | Type of participant |
|-------------------------|----------|----------------------------------------------------|---------------------------------|--------|-----------------------------------------|
| Sustainable Development | Malta | 3 – 5 th March 09 | 11 – 14 (2) | A | PCon, Gov, Gov, NGO, Ac, Gov, NGO |
| | | | | B | PvS, Gov, Gov, Stu, Gov, LGov, Stu |
| Sustainable Development | Slovakia | 15 – 18 th March 09 | 15 - 23 (3) | C | Stu, Gov, Gov, Gov, Ac, LGov, LGov |
| | | | | D | Gov, Stu, Res, NGO. NGO, LGov, LGov, Ac |
| | | | | E | NGO, Ac, Ac, Res, Stu, Pol, LGov, LGov |
| Agriculture | Slovakia | 15 th and 16 th April 09 | 18 (3) | F | Res, Ac, Ac, Ac, Ac, LGov |
| | | | | G | Res, NGO, Ac, Ac, Ac, Gov, NGO |
| | | | | H | Res, Ac, Ac, Ac, Ac |
| Sustainable Development | Finland | 14 th and 15 th September 09 | 13 (3) | I | Gov, Gov, LGov, LGov, LGov |
| | | | | J | LGov, LGov, LGov, PvS |
| | | | | K | LGov, LGov, NGO, Ac, NGO |
| Transport | Denmark | 26 th and 27 th November 09 | 17 (3) | L | PvS, PvS, Res, Gov, Gov, PvS |
| | | | | M | PvS, Res, LGov, Gov, NGO |
| | | | | N | PvS, PCon, Gov, Res, Res, Gov |

Participant codes

| | |
|------|-----------------------------------------------------------|
| PvS | Private sector |
| PCon | Private consultant |
| Gov | Government employee (public sector) at the national level |
| Res | Researcher |
| Ac | Academic |
| LGov | Local Government |
| NGO | Non Governmental Organisation |
| Stu | Student |
| Pol | Politician |

Table 3. Some I&I 'use' themes that emerged from the POINT workshops (summarised as the 5 D's).

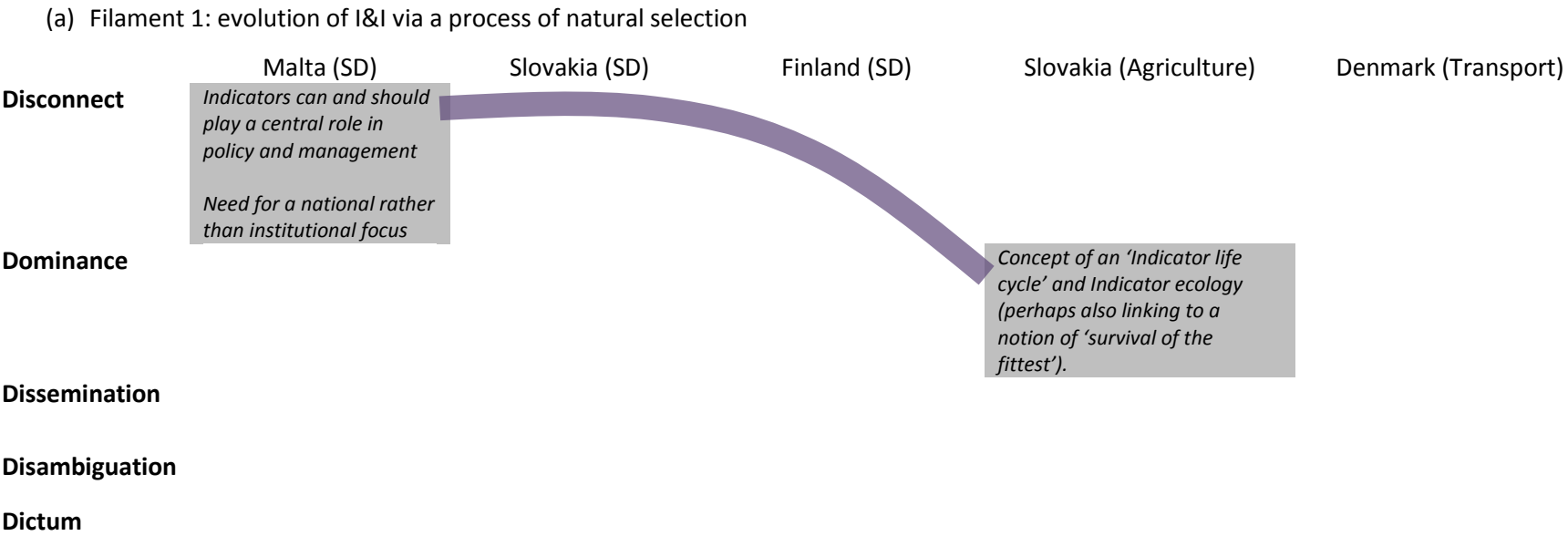
| I&I use theme | Meaning |
|------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <i>Disconnect</i> | Issues of connection between I&I and their influence in policy. Includes understanding what is required for I&I to have an influence and what needs to be done and by whom? |
| <i>Dominance</i> | Dominance of more narrow worldviews. For example a dominance of economic I&I making it difficult for other I&I to be heard. |
| <i>Dissemination</i> | Includes, for example, the need for education and the means by which I&I information on is dispersed amongst those mean to use it. |
| <i>Disambiguation</i> | Covers issues such as data availability issues and opaqueness of existing I&I making them difficult to appreciate. |
| <i>Dictum</i> | Includes the need for a grammar or rules – more generally of how I&I are developed and are expected to be applied, and, more specifically of sustainable development so we all know what it is. |

Table 4. Some common points raised across POINT workshops to date. Please note that the list is by no means exhaustive.

| | Malta (SD) | Slovakia (SD) | Finland (SD) | Slovakia (Agriculture) | Denmark (Transport) |
|-------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Disconnect | <p><i>Indicators can and should play a central role in policy and management</i></p> <p><i>Need for a national rather than institutional focus</i></p> | <p><i>Stakeholders don't use indicators or at least they don't think they are using indicators.</i></p> | <p><i>Information users and producers need to understand each other. This is not clear as yet. Who are indicators for? Different groups have different needs and presentation needs to be targeted. Need for better communication between science and politics.</i></p> <p><i>Indicators need to work at local, national and international level but there is a disconnect.</i></p> | <p><i>Need for EU policy makers to come down to the local level when developing/using indicators (echoes of Centre and Periphery argument).</i></p> <p><i>Indicators as a means to ensure justice. This relates to the need for indicators to be employed to ensure that some do not gain advantage over others.</i></p> | <p><i>Problems of responsiveness to change. Entire processes are developed to provide information, but can change really be made to data collection processes to match the changes in thinking? Even changes at the top level are slow.</i></p> <p><i>We assume that decisions are made on a rational basis – and we know that they are not.</i></p> <p><i>Need to improve dialogue between users and producers of indicators. Indicators must be relevant to people's needs so there has to be a switch of focus from quantity to quality. Political will and resources are key to achieving this.</i></p> |
| Dominance | <p><i>People need to care enough to do the right thing .. from using indicators to planning how they could be widely available. But do they care enough? Is there will?</i></p> | <p><i>'Confusion of Agency of SD'. SDIs are not clear and oppose economic indicators.</i></p> | <p><i>Some indicators are easy to see .. but some are not so easy. Some formulae are hard to understand .. what is the point of an indicator that no one understands?</i></p> | <p><i>Concept of an 'Indicator life cycle' and Indicator ecology (perhaps also linking to a notion of 'survival of the fittest').</i></p> | <p><i>We are very good at making indicators but do they work for all perspectives? It's a case of justice and balance. Will the politicians really want to hear what the indicators say?</i></p> |
| | | <p><i>Emphasis on economic reductionism/ determinism. Indicators for SD are not really known. Difference</i></p> | <p><i>The world is the way it is because we are trying to maximise the 'profit' indicator. Short termism of</i></p> | | <p><i>Seeing the world through red glasses. Change the colour (indicators) and you change the world view.</i></p> |

| | | | | | |
|-----------------------|--------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| | | <i>between indicators that 'people care about', like GDP and 'hidden' indicators – GPI and ISEW. Economic indicators dominate in this 'indicator landscape'.</i> | <i>economics over long term view of sustainable development.</i> | | |
| Dissemination | <i>Importance of education. Communication and need to talk/listen with stakeholders. This is often poor.</i> | <i>Importance of education (quality). Agencies need to raise awareness (role for the media – manipulation?).</i> | <i>Use of media like TV to get information out. Need for an open source (Wiki?) approach to indicator development; the 'Google-isation' of the indicator world.</i> | | <i>Continuous interaction with key stakeholders is needed.</i> <i>Democracy is perhaps too big? Maybe transparency and efficiency is a better focus.</i> |
| Disambiguation | <i>Importance of data availability and quality and resource implications.</i> | <i>Need to improve indicator methodology and develop new indicators.</i> | <i>Calculation methods are a mess. Confusing methodologies. Need to be understood.</i> | | <i>Problems exist throughout the processes of data collection, analysis and presentation when dealing with indicators.</i> <i>We need a more targeted use of indicators and the end result would be better, but we know that people are not rational.</i> |
| Dictum | <i>Rules of use of indicators</i> | <i>Existing ways of thinking are very entrenched. Difficult to break through. No one understands the 'rules of SD'. Need to develop a 'grammar of SD'.</i> | <i>Need for indicator 'rules'</i> | | <i>Indicators have to be more precisely defined to be an improved input for decision making.</i> <i>Needs deeper engagement of stakeholders. Users need to be more involved.</i> |

Table 5. Three strands of thought that emerge from the matrix in Table 1.



(b) Filament 2: I&I universe to I&I multiverse



(c) Filament 3: Rationality of policy and the influence of I&I

